**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**Claim 1 (currently amended):** A method of etching a workpiece in a vacuum plasma processor chamber comprising converting a gas species into an AC etchant plasma that is continuously applied to the workpiece while a feature of the workpiece is being formed, the vacuum chamber being subject to operating at different pressures while the workpiece is being processed, the gas species being subject to flowing into the chamber at different flow rates while the workpiece is being processed, gradually changing, on a pre-programmed basis, the amount of AC power supplied to the plasma during etching of the workpiece, ~~while the power is in a steady state condition subsequent to power start up and prior to the beginning of power shut down,~~ wherein a gradual transition in the shape of material in the workpiece being processed occurs in response to the gradual power change, the gradual power change occurring during the gradual transition in the shape of the material.

**Claim 2 (previously presented):** The method of claim 1 wherein the gradual power change occurs while no change is made in (a) the species, (b) the pressure or (c) the flow rate.

**Claim 3 (previously presented):** The method of claim 1 wherein the AC power is supplied by an electrode coupling an AC electric field to plasma in the chamber.

**Claim 4 (original):** The method of claim 3 wherein the electrode is responsive to an AC power source that supplies RF bias voltage to the electrode, the electrode being on a holder for the workpiece.

**Claim 5 (original):** The method of claim 3 wherein the electrode is responsive to an AC power source that supplies RF plasma excitation voltage to the electrode, the electrode responding to the RF voltage to supply RF electric field to the plasma to excite the gas to the plasma.

**Claim 6 (original):** The method of claim 3 wherein the AC power is supplied by a coil coupling an RF plasma excitation electromagnetic field to the chamber.

**Claim 7 (canceled).**

**Claim 8 (previously presented):** The method of claim 1 wherein the species is ionized into a plasma that etches the material to form the feature, the gradual power change, the species and the continuous application of the plasma to the workpiece being such that the material is shaped to have a rounded corner that includes the formed feature in response to changes in the ionized plasma etchant resulting from the gradual power change

**Claim 9 (previously presented):** The method of claim 8 wherein the etching, which occurs in response to changes in the ionized plasma etchant resulting from the gradual power change and the continuous application of the plasma to the workpiece, forms a trench wall

including the rounded corner, the trench and the rounded corner being included in the formed features.

**Claim 10 (original):** The method of claim 9 wherein the rounded corner is at an intersection of a wall and a base of a trench

**Claim 11 (previously presented):** The method of claim 8 wherein the rounded corner is at an intersection of a wall and a surface intersecting the wall, the surface extending generally at right angles to the wall.

**Claim 12 (previously presented):** The method of claim 1 wherein the gradual change includes steps having power changes no greater than about several watts, the power remaining at a constant wattage for no more than about 1 second.

**Claim 13 (original):** The method of claim 12 wherein the power steps are a few milliwatts and remain at a constant power for about 1 millisecond.

**Claim 14 (withdrawn and currently amended):** A vacuum plasma processor for etching a workpiece in a vacuum plasma processor chamber wherein a gas species is converted into an AC etchant plasma comprising a reactive element for supplying an electric field to plasma in the chamber, and an electric source for supplying gradually changing amounts of power on a preprogrammed basis to the reactive element ~~while the power is in a steady state condition subsequent to power start up and prior to the beginning of power shut down~~, a

controller for causing the source to supply the gradually changing amounts of power on the preprogrammed basis to the reactive element while a feature of a workpiece is being formed by etching and for causing a gradual transition in the shape of material in the workpiece being etched in response to the gradual power change, the processor being arranged to cause the gradual power change to occur during the gradual transition in the shape of the material and to continuously apply the AC etchant plasma to the workpiece while a feature of the workpiece is being formed.

**Claim 15 (canceled).**

**Claim 16 (withdrawn):** The processor of claim 14 wherein the controller is arranged for (a) controlling (i) a gas species adapted to flow into the chamber, (ii) the pressure in the vacuum chamber, and (iii) the flow rates of the gas species, and (b) maintaining constant (i) the gas species, (ii) the gas species flow rate and (iii) the chamber pressure while the plasma power is gradually changing on the preprogrammed basis

**Claim 17 (currently amended):** A memory storing a computer program for controlling a computer for controlling etching of a workpiece in a vacuum plasma processor chamber wherein a gas species is converted into an AC etchant plasma, the chamber being capable of operating at different pressures while the workpiece is being processed, the gas species being subject to flowing into the chamber at different flow rates while the workpiece is being processed, the computer program storing signals causing (a) control of the amount of AC power applied to the plasma while the workpiece is being etched; and (b) the continuous application of

the AC etchant plasma to the workpiece while a feature of the workpiece is being formed, the stored signal for controlling the amount of applied AC power causing gradual preprogrammed changes in the amount of AC power supplied to the etchant plasma during etching of the workpiece ~~while the power is in a steady state condition subsequent to power start up and prior to the beginning of power shut down~~, the stored signal causing gradual power change being such as to cause a gradual transition in the shape of material in the workpiece being etched in response to the gradual power change to cause the gradual power change to occur during the gradual transition in the shape of the material.

**Claim 18 (previously presented):** The memory of claim 17 wherein the computer program also stores signals causing (a) the vacuum chamber to operate at different pressures while the workpiece is being etched and (b) control of the gas species type and the flow rates thereof into the chamber while the workpiece is being etched, the stored signals causing the gradual power change to occur while no change is made in (a) the species, (b) the pressure or (c) the flow rate

**Claim 19 (canceled).**

**Claim 20 (previously presented):** The memory of claim 17 wherein the stored signals control etchant species supplied to the chamber while the workpiece is being processed and the gradual power transition so as to cause the workpiece to be etched to have a rounded corner.

**Claim 21 (previously presented):** The memory of claim 20 wherein the stored signals control etchant species supplied to the chamber while the workpiece is being processed and the gradual power transition so as to cause the workpiece to be etched to have a trench wall including the rounded corner.

**Claim 22 (previously presented):** The memory of claim 21 wherein the rounded corner is at an intersection of a wall and a base of a trench.

**Claim 23 (previously presented):** The method of claim 1 wherein the gradual change is substantially continuous and gradual.

**Claim 24 (withdrawn):** The processor of claim 14 wherein the gradual change is substantially continuous and gradual.

**Claim 25 (previously presented):** The memory of claim 17 wherein the gradual change is substantially continuous and gradual.

**Claim 26 (previously presented):** The method of claim 23 wherein the gradual change includes steps having power changes in the range of a few milliwatts to several watts and having durations in the range of about one millisecond to no more than one second.

**Claim 27 (withdrawn):** The processor of claim 24 wherein the gradual change includes steps having power changes in the range of a few milliwatts to several watts and having durations in the range of about one millisecond to no more than one second.

**Claim 28 (previously presented):** The memory of claim 17 wherein the gradual change includes steps having power changes in the range of a few milliwatts to several watts and having durations in the range of about one millisecond to no more than one second.

**Claim 29 (canceled).**

**Claim 30 (previously presented):** The method of claim 8 wherein the gradual change includes steps having power changes no greater than about several watts, the power remaining at a constant wattage for no more than about 1 second.

**Claim 31 (previously presented):** The memory of claim 20 wherein the gradual change includes steps having power changes in the range of a few milliwatts to several watts and having durations in the range of about one millisecond to no more than one second.